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COMMONWEALTH of VIRGINIA

STATE WATER CONTROL BOARD

2111 Hamilton Street

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367

May 27, 1987

Dr. Walter Lee
EPA, Region III
841 Chestnut Building (3HW14)
Philadelphia, Pennsylvania 19107

Dear Walter:

Re: Scovill, Inc., Montross, Virginia effluent limitation for proposed discharge from noted treatment ponds. This is in answer to your request for State limitations for a discharge from the metal treatment ponds. Enclosed is a memo dated May 27, 1987, which gives the information you requested.

Note that the Kilmarnock regional office received a similar request by telephone from Charles Perry in April, 1986. At that time, the Kilmarnock office explained to Mr. Perry that water quality standards and criteria would have to be maintained in the recovery stream.

Recently a similar request was received from Law Environmental Services for limitations. By copy of this letter the limitations are being forwarded to Kathleen A. McNelis of that firm.

If you have any further questions, please do not hesitate to call me.

Sincerely,

For Vince A. Carpano
W. C. Engineer

Enclosures

VC20:bw

cc: Kathleen A. McNelis
Keith Fowler

AR401028

MEMORANDUM

Office of Environmental Research and Standards
State Water Control Board

2111 N. Hamilton Street P. O. Box 11143 Richmond, Virginia 23230

SUBJECT: Scovill, Inc., Montross, Virginia
Effluent Limitations for Proposed Discharge from Metal Treatment Ponds

TO: V. A. Carpano, OWRM

FROM: Richard W. Ayers, OERS RWA

DATE: May 27, 1987

COPIES: S. B. Alexander, K. Fowler, R. Lutz, file

In response to questions and concerns by Scott Alexander concerning a memo from Debra Trent to Vince Carpano dated May 26, 1987 regarding the proposed discharge from Metal Treatment Ponds at the A. R. Winarick site, I have prepared the following refinements to Debra Trent's memo:

1. Effluent limitations shall be based on the hardness value of the receiving stream, Scates Branch, which is 35 mg/l.
2. The maximum daily flow of the proposed discharge, reported as 0.15 MGD which includes cooling water discharges), should be used for determining maximum effluent limitations.
3. The equations for calculating limitations at the point of discharge as proposed by Keith Fowler, assume mixing with a 0.15 MGD flow at the head of Scates Branch, based on average flow vs. drainage basin area comparison with Bush Mill Stream (0.15 MGD is 1/2 the average flow determined by this comparison, since the peripheries of the drainage basin are the first to become dry ditches during dry weather) are acceptable.
4. The following maximum effluent limitations have been derived for ammonia, chromium, copper, cyanide, nickel, cadmium, lead, and zinc using the equations in the attached memorandum.

<u>Parameter</u>	<u>Maximum Effluent Limitation</u>	<u>Instream Water Quality Criteria</u>
Ammonia (unionized)	refer to the tables in Attachment I	
Ammonia (total)		
Total Recoverable Hexavalent Chromium	22.0 ug/l	11.0 ug/l
Active Copper	9.6 ug/l	4.8 ug/l
Total Cyanide	10.4 ug/l	5.2 ug/l
Total recoverable nickel	86.0 ug/l	43.0 ug/l
Total recoverable zinc	94.0 ug/l	47.00 ug/l
Total recoverable Cadmium	1.0 ug/l	0.50 ug/l
Total recoverable lead	1.7 ug/l	0.85 ug/l

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5. In addition to the above effluent limitations, I am recommending a one-time toxicity test on the metal treatment ponds using *Daphnia pulex*. The *Daphnia* test shall be a 48-hour static test conducted prior to discharge in such a manner and at sufficient dilutions for calculation of a valid LC50.

6. Although TOC has not been considered for establishing an effluent limit, monitoring may provide useful information as an indicator parameter.

If you have any questions, please contact me.

:scovill

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Ammonia (unionized or total should refer to attached tables)

Total Ammonia (mg/liter NH_3)

pH	0°C	5°C	10°C	15°C	20°C	25°C	30°C
6.50	2.5	2.4	2.2	2.2	2.1	1.46	1.03
6.75	2.5	2.4	2.2	2.2	2.1	1.47	1.04
7.00	2.5	2.4	2.2	2.2	2.1	1.47	1.04
7.25	2.5	2.4	2.2	2.2	2.1	1.48	1.05
7.50	2.5	2.4	2.2	2.2	2.1	1.49	1.06
7.75	2.3	2.2	2.1	2.0	1.98	1.39	1.00
8.00	1.53	1.44	1.37	1.33	1.31	0.93	0.67
8.25	0.87	0.82	0.78	0.76	0.76	0.54	0.40
8.50	0.49	0.47	0.45	0.44	0.45	0.33	0.25
8.75	0.28	0.27	0.26	0.27	0.27	0.21	0.16
9.00	0.16	0.16	0.16	0.16	0.17	0.14	0.11

Un-ionized Ammonia (mg/liter NH_3)

6.50	0.0007	0.0009	0.0013	0.0019	0.0026	0.0026	0.0026
6.75	0.0012	0.0017	0.0023	0.0033	0.0047	0.0047	0.0047
7.00	0.0021	0.0029	0.0042	0.0059	0.0083	0.0083	0.0083
7.25	0.0037	0.0052	0.0074	0.0105	0.0148	0.0148	0.0148
7.50	0.0066	0.0093	0.0132	0.0186	0.026	0.026	0.026
7.75	0.0109	0.0153	0.022	0.031	0.043	0.043	0.043
8.00	0.0126	0.0177	0.025	0.035	0.050	0.050	0.050
8.25	0.0126	0.0177	0.025	0.035	0.050	0.050	0.050
8.50	0.0126	0.0177	0.025	0.035	0.050	0.050	0.050
8.75	0.0126	0.0177	0.025	0.035	0.050	0.050	0.050
9.00	0.0126	0.0177	0.025	0.035	0.050	0.050	0.050

Hardness of Scates Branch is 35 mg/L

W.Q. Criteria Instream

Max.
Effluent
Conc.

Cadmium, total recoverable (T.R.) 0.50 mg/L 1.0

Chromium, T.R. Hexavalent 11 mg/L 22

Copper, active (or T.R.) 4.8 mg/L 9.6

Cyanide, total 5.2 mg/L 10.4

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